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basic imagery interpretation report

Songlin (Sung-lin) Missile Test Center (S)

MISSILE RANGES: STRATEGIC SSM SPACE FACILITIES

25X1

CHINA

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Songlin (Sung-lin) Missile Test Center					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	See below	See below	See below	See below	See below

MAP REFERENCE

SAC. US Air Target Chart, Series 200, Sheet 0495-21, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
	NA

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Installation Name	Geographic Coordinates	Category	BE No	COMIREX No	NIETB (MRN) No
Songlin Missile Test Center	28-14-20N 102-01-49E				
Songlin Space Launch Site A	28-14-55N 102-01-22E				
Songlin Missile Assembly & Checkout Area	28-13-07N 102-01-32E				
Songlin Main Support Base	28-11-40N 102-06-53E				
Songlin Storage Area and Rail-to-road Transfer Point	28-12-20N 102-08-40E				
Songlin Technical Support Area	28-11-55N 102-03-37E				

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ABSTRACT

1. (TSR) This is the first basic report on the Songlin (Sung-lin) Missile Test Center (MTC) which is being constructed in the south-central portion of China in Sichuan (Szechuan) Province. The MTC is 180 nautical miles (nm) north-northwest of Kunming (Kun-ming) and 8.1 nm west-northwest of the village of Songlin. The center is served by an all-weather road and by a rail line which branches off from the Kunming/Chengdu (Cheng-tu) Railway.

2. (TSR) The Songlin MTC is composed of one space launch site, a missile assembly and checkout facility, a technical support facility, a main support base, a storage and rail transfer point, and a rail terminus. Construction was continuing in all of the areas of the MTC; however, most of the important launch-related facilities are almost externally complete.

3. (U) All imagery acquired between January 1978 and December 1979 was used in the preparation of this report. The report includes one map, nine annotated photographs, seven tables, and one line drawing.

INTRODUCTION

4. (TSR) The Songlin MTC is the sixth and newest missile test center in China (Figure 1). It is in southern China in a narrow 10.8-nm-long mountain valley. The climate at the center is dominated by the monsoon affects, giving it warm, wet summers and clear, mild winters. Rainfall averages close to 50 inches per year and is concentrated between the months of April and November. The mountainous terrain, in which the center is situated, also influences the local weather patterns. The mountain valley is oriented on a general northwest/southeast axis, with the southeast end opening into a broad mountain valley and the northwest end enclosed on three sides by mountainous terrain. The launch site and assembly and checkout area are situated at the northwest terminus of the valley, and support facilities are near the open southeast end of the valley.

5. (TSR) Songlin MTC has been under construction since June 1971 when construction support facilities and a railspur were observed under construction in the mountain valley. Construction progressed at a very slow pace on the MTC between 1971 and December 1977. The slow pace of construction during this period may have been due to developmental problems encountered in the CSS-X-4/CSL-2 flight test program during the 1971—1973 time period or the internal disruptions stemming from the cultural revolution and its aftermath. During February 1978, the construction activity was first identified as a missile test center under construction. During 1978 and 1979, construction of the launch-related facilities progressed at a rapid pace. The missile service tower was constructed next to the launch pad at the launch site between [redacted] the 22 gantry support arms and the nine missile service platforms were assembled on the ground next to the service tower in preparation for installation on the south side of the tower. Then, during a two-week period from [redacted] all 22 of the gantry support arms were installed in pairs on the service tower. These form a complete enclosure over the launch point to support and protect the erected missile.

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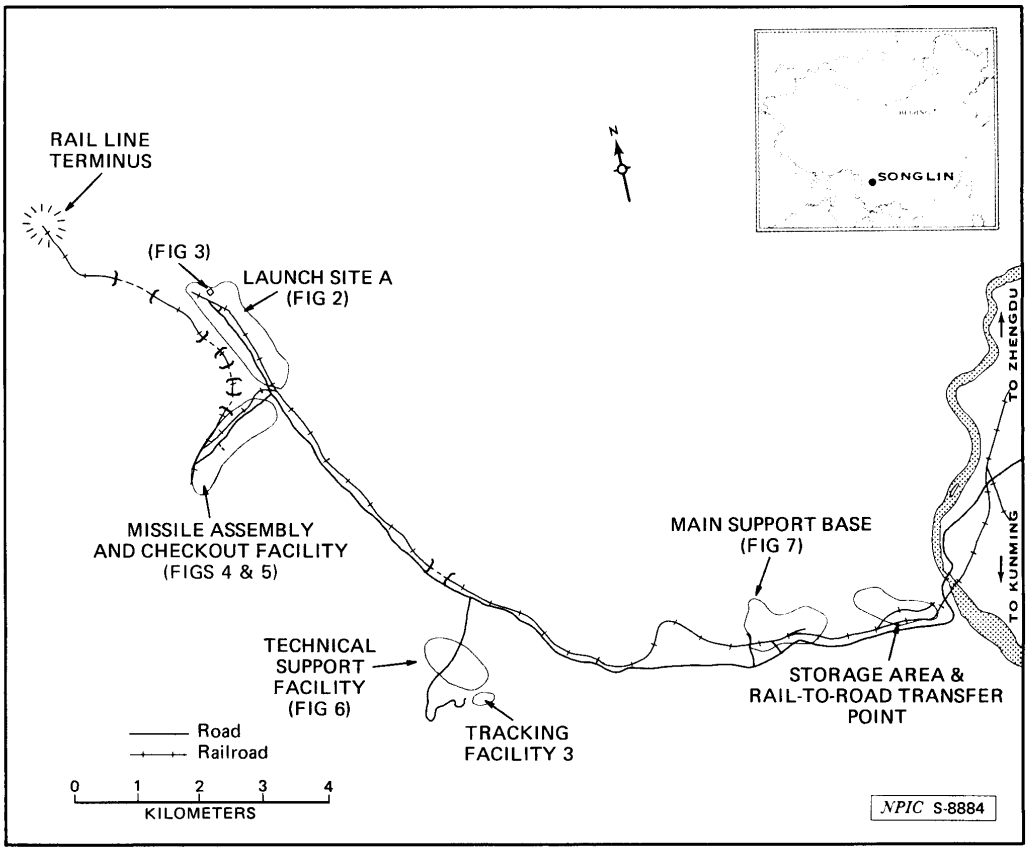

FIGURE 1. SONGLIN MISSILE TEST CENTER IN CHINA

Following a two and one-half month period of no coverage, on [redacted] the missile service platforms were no longer on the ground and were probably installed in the service tower. The missile service platforms form interior work platforms in the gantry support arms and vary in size up to the maximum diameter of the erected missile at each level. On [redacted] components for a probable launch stand were being assembled on the ground next to the launch tower. Three days later, on [redacted] the launch stand components were no longer present; however, no launch stand has been observed on the launch pad. The widely varying pace of construction at the launch site may have been the result of changing program priorities or may have been due to the availability of materials or personnel. The construction of missile-related facilities, such as high-bay checkout building launch control facilities and propellant facilities, have proceeded concurrently with the launch site construction and will be externally complete prior to the launch site becoming operational.[2] Internal work was probably continuing at all of the launch-related facilities. If the present level of effort is sustained, Songlin could possibly be ready for launch operations by mid-1980. The type of SSM to be launched from Songlin is probably the Long March 3, a CSL-2 with an added third stage. An almost identical launch site is at Wuzhai (Wu-chai) SSM Research and Development Test Launch Site D [redacted] Two CSS-X-4 missiles have been launched from that site, on [redacted] to the Kuruktag (Ku-lu-ko Shan-mo) Impact Area [redacted] in western China. The almost identical launch towers at the Wuzhai and Songlin launch sites indicate that they were designed for the same or similar launch vehicles. Wuzhai may serve as the research and development and military satellite launch site and Songlin will probably be the operational civilian satellite launch site.

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6. (TSR) Songlin MTC would be capable of supporting any or all of the following missions: full range testing of the CSS-X-4 ICBM to Pacific Ocean impact, CSL-2 satellite launches, launches of a CSL-2 with an additional third stage, or an entirely new large missile. ICBM launches from Songlin would probably be on an eastward trajectory to a broad ocean area impact in the central Pacific Ocean. The advantage that Songlin offers in this capacity is that no foreign countries would be overflown by the missile. CSL-2 satellite launchers could launch larger satellite payloads from Songlin than from any other existing missile test center because of its southerly location.[3] Two CSSX-4/CSL-2 missiles have been launched from the almost identical Wuzhai Test Launch Site D; however, this missile does not fill the available space within the launch gantry tower. A new large missile or a CSL-2 missile with a third stage added would fill the available space in the gantry, as delineated by the openings in the missile service platforms. A new launch vehicle, substantially more powerful than the CSL-2, is needed to fulfill Chinese launch requirements in the 1980—1990 time period. China has reserved equatorial orbit positions and radio frequencies with the International Telecommunications Union for a domestic communications satellite network of two satellites.[4] Songlin is ideally situated to be the launch point for these satellites if an

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indigenous launcher with sufficiently enhanced capability can be developed in the required time period.The southern location of Songlin allows the greatest amount of weight to be placed into a geostationary equatorial orbit. Songlin could be completed and ready to support a communications satellite launch as early as mid-1980. Visiting delegations of Chinese to the United States have indicated that a new space launch vehicle, comparable to the US Delta and Atlas Centour launchers, is under development in China. This new Chinese launch vehicle is being designed with a cryogenic (liquid-oxygen/liquid-hydrogen) propellant third stage added to a CSS-X-4/CSL-2-based first and second stage.Developmental problems have apparently been encountered with the cryogenic third stage and may delay the indigenouscommunications satellite launch program.[5,6] If Songlin is intended to support this launch program, then initial launch operation may not take place until the 1981—1985 time period, depending on launch vehicle availability.

7. (TSR) Support facilities and tracking facilities supporting the MTC (under construction) should be completed prior to the completion of the launch site. Support facilities under construction are more than sufficient to support any presently identified launch requirements. Two permanent tracking facilities were under construction, with one of the tracking facilities potentially operational with one antenna present. These tracking facilities probably will also support launches into the nearby Xichang (Hsi-chang) Missile Impact Area [redacted] in addition to launches from Songlin. Mobile instrumentation equipment for two mobile tracking sites has been observed parked in the MTC support facilities. All of the presently identified tracking facilities will probably be operational by mid-1980. A complete description of these tracking facilities will be published separately. 25X1

BASIC DESCRIPTION

Space Launch Site A

8. (TSR) Space Launch Site A (Figure 2 and Table 1) is the only launch site at the MTC. It is at the northwest end of the complex and is served by both a rail siding and an all-weather road. The launch site consists of a launch area, two propellant facilities, a command and control facility, a rail receiving area, a launch site support area, and temporary construction support facilities.

Launch Area

9. (TSR) The launch area contains a large packed-earth apron with a concrete launch pad substructure below grade level, a large fixed missile service tower with movable gantry support arms over the launch pad, and buried conduits and propellant pipelines. The earthen apron was cleared and graded when activity was first observed at the MTC in June 1971. The apron is supported on three sides by concrete retaining walls. A stream, flowing from a ravine north of the launch area into the main valley, has been channelized into a concrete conduit forming the north side of the apron area. The concrete launch pad substructure was constructed between May 1976 and January 1978 (Figure 3A). The substructure is a concrete rectangular box, [redacted] by 10 meters, with the long axis oriented at 100/280 degrees. The structure is further subdivided into an open-topped flame bucket on the east and a launch pad base on the west. The flame bucket is [redacted] deep at the side nearest the launch pad, tapering upward at a [redacted] slope to near ground level at the end away from the launch pad. The launch pad base is [redacted] square exhaust opening is centered on the west end of the base. This opening in the launch pad directs the exhaust away from the base of the missile into the flame bucket. Both the exhaust opening and the flame bucket have been temporarily covered since completion, probably to keep rain out and as a safety measure for workers at the site. A small [redacted] meter-square subsurface building is parallel with and adjacent to the center north side of the launch pad substructure. One square opening [redacted] meters) and one rectangular opening [redacted] meters) extend approximately [redacted] above the east end of the building. The top of the building was subsequently earth covered with the exception of the two openings, which are probably used for access and ventilation. A second larger subsurface building, [redacted] is northwest of the launch pad. An L-shaped, [redacted] meter-high rectangular passageway connects the east side of this building to the north side of the launch pad substructure. 25X1 25X1 25X1 25X1 25X1

10. (TSR) A combination missile service tower/gantry has been constructed on the north side of the launch pad (Figure 3B). Footings for the tower were first observed on [redacted] Erection of the tower were first observed on [redacted] Erection of the tower was underway on [redacted] and the service tower was completed when observed on [redacted] nine missile service platforms and 11 pairs of gantry support arms were assembled on the ground next to the service tower. Between [redacted] all 11 pairs of gantry support arms were installed on the south side of the service tower over the launch pad. The missile service platforms had been installed in the interior of the gantry support arms directly over the launch pad by August 1979. The sizes and vertical spacing of the missile service platform in the service tower are shown on Figure 3C and Table 2. On [redacted] a probable launch stand was being assembled near the service tower/gantry. The probable launch stand was approximately [redacted] high with a diameter of [redacted] meters at the ring on top. This probable launch stand was not installed on the launch pad and may still be under construction in one of the nearby construction support buildings. The missile service tower/gantry (Figure 3C and Table 2), completed on the north side of the launch pad, is [redacted] high. A support ring for a hammerhead crane on top of the tower is [redacted] meters above the apron. The hammerhead crane, which has been used for installation of the gantry support arms and missile service platforms, will be used to lift missile stages into launch position on the 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1

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Table 1.
Songlin Space Launch Site A
(Items keyed to Figure 2)

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Item No	Description	Dimensions (m) L	W	Number of Stories*
1	Propellant bldg			
2	Propellant-related bldg			
3	Command and control support bldg			
4	Propellant transfer bldg			
5	General materials receiving bldg			
a				
b				
6	General materials receiving bldg			
a				
b				
7	Spherical tank gas storage bldg			
8	Propellant transfer bldg			
9	Propellant bldg			
a				
b				
10	Propellant-related bldg			
11	Storage/support bldg			
12	Storage bldg			
13	Storage bldg			
14	Storage bldg			
15	Barracks			
a				2
b	Support/storage bldg			
16	Barracks			
17	Barracks			
18	Messhall cooking area			
a				
b	Messhall dining area			
c	Messhall cooking area			
19	Barracks			2
20	Barracks			2
21	Support bldg			
a				
b				
22	Barracks			2
23	Barracks			2
24a	Messhall dining area			
b	Messhall cooking area			
25a	Messhall dining area			
b	Messhall cooking area			
26	POL support bldg			
27a	POL tank			
b	POL tank			
28	Storage bldg			
29	Motor pool office/storage bldg			
30	General storage/support bldg			
31	General storage/support bldg			
32	General storage/support bldg			
33	Barracks			
34	Barracks			
35	Barracks			
36	Barracks			
37	Messhall			
38	Barracks			
39	Barracks			
40	Office and storage bldg			
41	Barracks			
42	Messhall			
43	Barracks			
44	Barracks			
45	Barracks			
46	Barracks			
47	Barracks			
48	Garage			
49	Storage bldg			
50	Storage bldg			
51	Storage bldg			
52	Garage			
53	Office/storage bldg			

*Structure is one story unless indicated otherwise.

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Table 2. Missile Service Platforms

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Platform Number	Diameter Open (m)	Height Above Launch Pad (m)
1		
2		
3		
4		
5		
6		
7		
8		
9		

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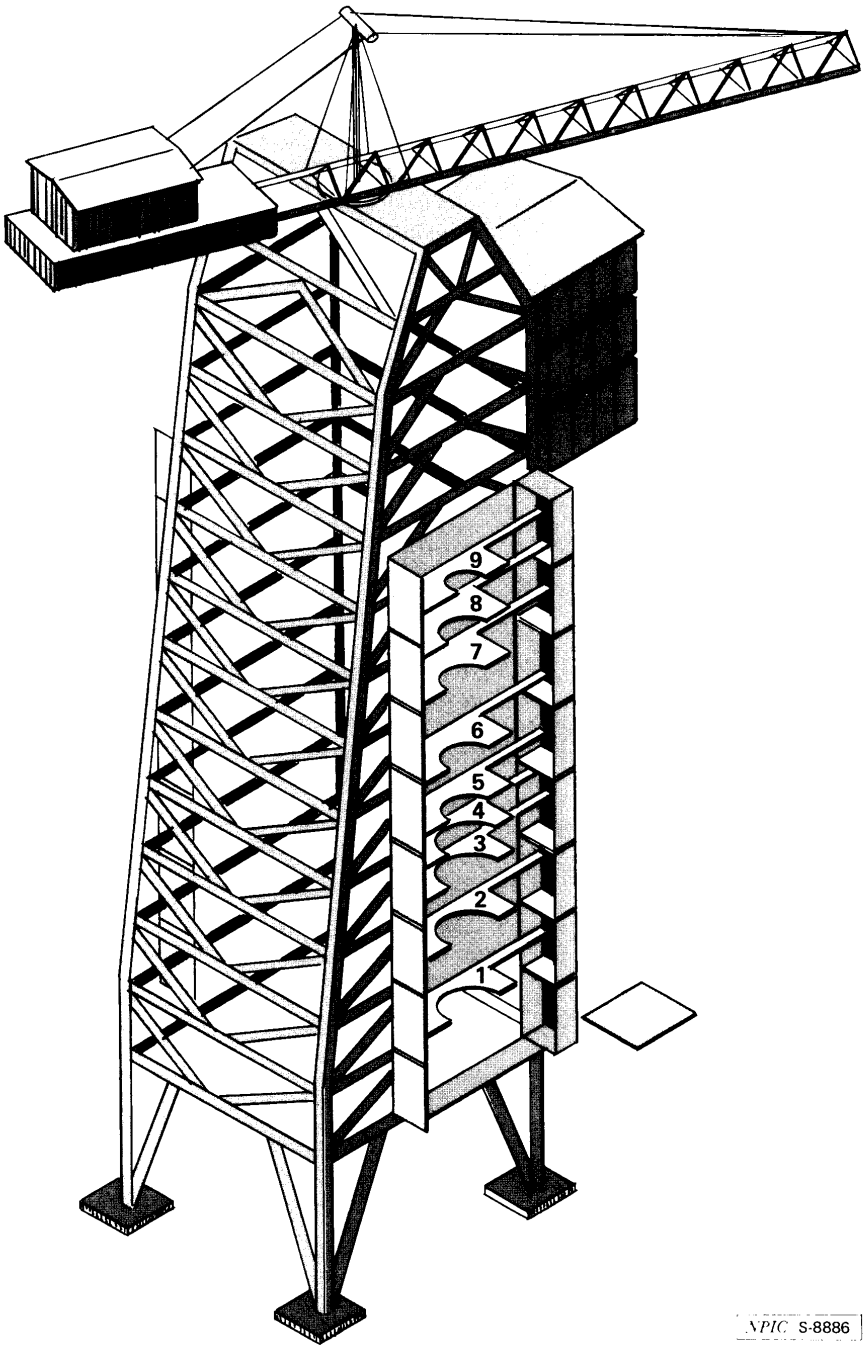

FIGURE 3c. CONCEPTUAL DRAWING OF MISSILE SERVICE TOWER/GANTRY IN SONGLIN LAUNCH AREA

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launch pad when the site becomes operational. A flat-roofed rectangular building, approximately 16 by 14 meters, has been constructed partially under the north side of the service tower. One half of the building is under the tower. This may be a construction support building that will be removed when construction and checkout of the tower is complete. Five construction support buildings are on the north and northeast sides of the launch area. A [redacted] buried water tank is at the top of a ridge north of the launch area and a buried pipe extends from the tank to the launch area. This may supply water for a deluge system to minimize damage in the exhaust impingement areas of the launch pad substructure.

Propellant Facilities

11. (TSR) Two almost identical propellant facilities support the launch site. One facility is 250 meters west of the launch pad and the other is 175 meters southeast of the launch pad. Each facility consists of two side-by-side adits 30 meters apart and a large propellant-related building with a tall exhaust stack immediately in front of the adits. The adit openings are [redacted] The areas around the west propellant adits have a concrete facade added to the face of the ridge to stabilize the earth around the adit entrances. The propellant-related buildings probably contain propellant conditioning equipment and pumps. Buried conduits extending from the propellant-related buildings to the launch pad will probably contain propellant lines. Cylindrical, probable propellant tanks with domed ends were observed in the rail receiving area and subsequently at the propellant adit entrances between September and December 1978. These tanks were probably installed in the propellant adits. The number of tanks installed in the facilities is unknown; however, five of the tanks were observed near the southeast propellant facility on [redacted]

Command and Control Facility

12. (TSR) The probable command and control facility is situated in an adit 170 meters west of the launch pad. The facility consists of an adit built into the hillside, with a [redacted] meter-wide entrance. A partially buried rectangular building was constructed immediately in front of the adit. This extension to the front of the adit consists of two personnel entrances in the concrete front wall with two small vents on top. A concrete-faced earthen embankment protects both sides of the building in front of the adit. The embankment on the east side of the building, toward the launch pad, extends well beyond the front of the building. A second [redacted] adit is approximately 50 meters east-northeast of the command and control facility in a concrete retaining wall facing the launch pad. This adit may connect, underground, with the command and control facility. The previously described large subsurface building near the northwest corner of the launch pad may also serve a command and control support function. Some conduits, for possible cables, have been observed in front of the probable command and control adit.

Rail Receiving Area

13. (TSR) This area extends northwest/-southeast along the south edge of the launch site. The northwest end of the rail line terminates at a probable propellant offloading building that services the west propellant facility. A large cylindrical, domed-end tank was installed in this building while the building was under construction. A second identical propellant offloading building is at the southeast end of the receiving area, servicing the southeast propellant facility. The rail line has dual tracks at the southeast end of the receiving area to allow for the continued use of the receiving area when the southeast propellant offloading position is occupied by propellant railcars. The central portion of the receiving area, directly south of the launch pad, contains one flat-roofed building; one step-roofed building with an open-sided, drive-through, peak-roofed shed appended to the south side; and a roofless building with 11 small spherical possible pressure tanks installed and pads for an additional 13 spherical tanks. The building with spherical tanks is probably an inert gas storage facility and the other two buildings are probably for general purpose storage.

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Launch Site Support Area

14. (TSR) The launch site support area is southeast of the launch area on the north side of the rail line. The area contains four messhalls, ten probable barracks, and 18 other support buildings.

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Construction Support Area

15. (TSR) The support area is spread over a large area south and east of the rail receiving area. The area contains 35 barracks, eight messhalls, 30 support buildings, a large truck parking area, and a weather station consisting of a step-roofed building and four weather instrument positions. Two partially buried cylindrical tanks are in a probable POL supply point near the center of the support area. When construction is completed at the launch site, most of the construction support buildings will probably be dismantled and removed. The weather station, the POL supply point, and several of the small support buildings will probably remain.

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Missile Assembly and Checkout Facility

16. (TSR) The missile assembly and checkout (MAC) facility is approximately 2,800 meters (1.5 nm) south of the launch site in a small ravine appended to the south side of the main valley (Figures 4 and 5 and Tables 3 and 4). Construction of the MAC facility was begun between February and November 1972 when foundations for the assembly and checkout buildings were observed under construction. Construction activity appeared to be suspended from November 1972 until May 1976. Construction on most of the support areas had been completed by late 1978. The large buildings in the assembly and checkout area were externally complete in August 1979. Construction of six small support buildings was underway on the west side of the facility and probable internal work was in progress in the other buildings in the area. The MAC facility is divided into an assembly and checkout area, three small support areas, and a headquarters/administration area.

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Assembly and Checkout Area

17. (TSR) The assembly and checkout area is approximately 1,000 meters south of the ravine entrance (FIgure 5). It contains two closely adjoining multistory missile assembly and checkout buildings, two multistory engineering buildings, two support buildings, a venturi-type cooling tower under construction, a heating plant, six building foundations under construction, and ten temporary construction support buildings. The two missile assembly and checkout buildings are approximately three stories high and are arranged in an L-shaped configuration. A railspur with two sidings serves the area. The two engineering buildings are east of the assembly and checkout buildings, with the larger engineering building at the south end of the area and the smaller engineering building at the north end of the area. The large engineering building is three stories high with a square center section, two rectangular wings on the north and south sides, and a one-story addition off from the south end of the south wing. The smaller three-story engineering building is oriented on an east/west axis and is adjacent to the north end of the north wing of the larger building. Covered passageways connect the large engineering building to the small assembly and checkout building, the large engineering building to the small engineering building, and the small engineering building to the large assembly and checkout building. The heating plant for the area is on the northeast corner of the area, with concrete conduits for heating pipes connecting the plant with the major buildings in the area.

Support Area 1

18. (TSR) Support area 1 is 300 meters south of the assembly and checkout area (Figure 4). It contains eight two-story barracks, a messhall, a multibay garage, a small shop/foundry building, one basketball court, and eight small support buildings.

Support Area 2

19. (TSR) Support area 2 is 200 meters north of the assembly and checkout area (Figure 4). It contains three two-story barracks; two shop/support buildings, one of which has probable foundries attached; and eight small support buildings.

Support Area 3

20. (TSR) Support area 3 is 100 meters north of support area 2 and 300 meters south of the headquarters/administration area (Figure 5). Support area 3 contains seven two-story barracks, one messhall, one shop/foundry, a basketball court, and six small support buildings.

Headquarters/Administration Area

21. (TSR) The headquarters/administration area is at the open north end of the ravine, 300 meters south of support area 3 and 900 meters south of the assembly and checkout area (Figure 4). The headquarters area contains a headquarters building with an attached auditorium, four three-story barracks, a messhall, a heating plant, 16 support buildings, and one shop/foundry. Foundation footings were under construction for one additional support building at the south corner of the area.

Technical Support Facility

22. (TSR) The technical support facility is approximately 3.0 nm southeast of the launch site on the south side of the main valley (Figure 6 and Table 5). The construction support area was present in January 1978. Clearing and grading activity for the remainder of the facility was observed in April 1978. The first building foundations were observed under construction in June 1978. Extensive construction was continuing in all areas of the facility during this period. The facility is divided into four separately wall-secured areas on an east/west axis: an apartment/housing area on the east, a technical support area, a construction support area, and a possible component test area on the west.

Apartment/Housing Area

23. (TSR) The apartment/housing area is at the eastern end of the facility and contains a probable sewage treatment pond and building, two large three-story apartment buildings, one large rectangular, single-story building under construction, two building foundations, 12 support buildings along the perimeter of the area, seven single-story temporary construction support barracks, one messhall, one monitor-roofed shop building, three animal pens, and one basketball court. Walls on the south and west sides of the area canalize streams past the area and probably provide some flood protection.

Technical Support Area

24. (TSR) The technical support area is centrally located and is the largest area in the facility with three apparent sections: a barracks section in the northeast portion of the facility, an administration section in the northwest portion, and an operations section in the south portion. The barracks section contains three large two-story barracks under construction, two large messhalls, one shop/foundry building, one support building and three temporary construction support buildings. The administration section contains two large L-shaped administration buildings, with the long sections three-stories and the shorter section two-stories, and four support buildings. The operations section encompasses the entire southern half of the area and contain 13 support buildings, two shop/foundry buildings, and a large inter-connected engineering and probable assembly/fabrication building. The engineering building is a large three-story building with a two-story wing attached to the north and south ends. A two-story covered passageway connects the engineering building to the large probable assembly/fabrication building. The large probable assembly/fabrication building has a central high-bay section with single-story sections appended to it on the west, north, and east sides and a two-story section attached to it on the south. The two-story section has two large rectangular vents, each near the east and west ends of the section. The central high-bay section has an arched roof that is higher than the surrounding portions of the building and may be for assembly/fabrication operations.

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Table 4.
Songlin Missile Assembly and Checkout Facility
(Items keyed to Figure 5)

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Item No	Description	Dimensions (m) L	W	No of Stories*
Assembly and Checkout Area				
1	Support/storage bldg			
2	Heating plant			
3	American-deck cooling tower			
4	Support bldg			
5	Support bldg			
a	High-roofed area			
b	Low-roofed area			
6	North missile assembly and checkout bldg			
a	Office/storage area			
b	Covered passageway			2
c	Office/storage area			
d	Assembly and checkout area			3
e	Office/storage area			2
7	North engineering bldg			
a	Office area			3
b	Covered passageway			2
8	South engineering bldg			
a	Office area			3
b	Reception/office area			3
c	Office area			3
d	Office/shop area			
9	Support bldg			
a	Office/shop area			
b	Office/shop area			
10	South missile assembly and checkout bldg			3
11	Storage bldg			
12	Storage bldg			
13	Storage bldg			
14	Storage/shop bldg			
a	Storage area			
b	Storage/shop area			
15	Storage/support bldg			
16	Storage/shop bldg			
a	Storage area			
b	Storage/shop area			
c	Open-sided drive-in shed			
Support Area 1				
17	Support/storage bldg			
18	Barracks			2
19	Barracks			2
20	Barracks			2
21	Barracks			2
22	Barracks			2
23	Messhall			
a	Cooking area			
b	Dining area			
c	Cooking area			
24	Barracks			2
25	Barracks			2
26	Barracks			2

*Structure is one story unless indicated otherwise.

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Table 5.
Songlin Technical Support Facility
(Items keyed to Figure 6)

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Item No	Description	Dimensions (m) L	W	No of Stories*
	Apartment/Housing Area			
1	Shop/foundry bldg			
2	Sewage treatment bldg			
3	Garage/storage bldg			
4	Storage bldg			
5	Storage bldg			
6	Building foundation			0
7	Building foundation			0
8	Apartment bldg			3
9	Apartment bldg			3
10	Storage bldg			
11	Storage/support bldg			
12	Storage/support bldg			
13	Storage/support bldg			
14	Barracks			
15	Barracks			
16	Barracks			
17	Barracks			
18	Barracks			
19	Barracks			
20	Barracks			
21	Support bldg			
22	Messhall			
a	Dining area			
b	Cooking area			
23	Support bldg			
24	Support bldg			
	Technical Support Area			
25	Shop/foundry bldg			
26	Messhall dining area			
27	Messhall cooking area			
28	Messhall cooking area			
29	Messhall dining area			
30	Storage/office bldg			
a	Office area			2
b	Storage area			
31	Office/support bldg			2
32	Barracks			2
33	Barracks			2
34	Barracks			2
35	Engineering bldg			3
a	East office area			2
b	Central reception/office area			3
c	West office area			2
d	Covered passageway			2
36	Storage/support bldg			
37	Storage/support bldg			
38	Assembly/fabrication bldg			
a	Shop/storage area			
b	Shop/storage area			
c	Shop/storage area			
d	High-bay assembly/fabrication area			3
e	Office area			2
39	North administration bldg			
a	Office/barracks area			3
b	Office area			2
40	South administration area			
a	Office/barracks area			3
b	Office area			2
41	Shop/foundry bldg			
42	Support/storage bldg			
43	Support/storage bldg			
a				
b				
44	Support/storage bldg			
45	Support/storage bldg			
46	Shop/storage bldg			
47	Foundry bldg			
48	Double foundry bldg			
49	Shop/storage bldg			
50	Shop/storage bldg			
51	Support bldg			
52	Office/support bldg			2
53	Support bldg			
	Construction Support Area			
54	Barracks			
55	Barracks			
56	Barracks			
57	Barracks			
58	Support bldg			
59	Support/storage bldg			
60	Support/storage bldg			
61	Barracks			
62	Barracks			
63	Barracks			
64	Barracks			
	Possible Component Test Area			
65	Office/support bldg			
66	Support bldg			2
67	Support bldg			
68	Possible testing bldg			
69	Possible testing bldg			
70	Storage bldg			
71	Support bldg			
72	Building ucon			
73	Rectangular structure ucon			
74	Rectangular structure ucon			
75	Support bldg			
a	East area			
b	West area			

*Structure is one story unless indicated otherwise.

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Construction Support Area

25. (TSR) The construction support area is west of the northwest corner of the technical support area and contains eight single-story temporary barracks, nine small support buildings, and animal pens. This area will probably be dismantled when construction is completed within the facility.

Possible Component Test Area

26. (TSR) The possible component test area is the westernmost area in the facility and is served by a central service road that enters the area at its eastern end. On the north side of the road a three-section, narrow, rectangular building with a raised center section is next to the area entrance. Immediately west of the three-section building are two small rectangular buildings that are interconnected by two pipes/conduits between their north and south walls. A peak-roofed support building is west of the interconnected buildings. On the south side of the access road, a flat-roofed rectangular building oriented north/south is next to the service road entrance. West of that building are two buried concrete structures. The buried structure nearest the road is smaller and rectangular. The second larger buried structure is south of the first structure and has a buried passageway with a north/ south axis connected to its east end. A rectangular building was under construction west of the two buried structures. West of that building is a pair of identical square concrete structures with [redacted] concrete walls. A possible vent-like structure is on the northeast corner of each of the structures. A T-shaped, flat-roofed building is immediately west of the two square structures. The complex of buildings and structures on the south side of the access road appear to be very heavily constructed. Their thick concrete walls and subsurface construction indicate that possible fabrication, storage, or testing of small explosives, explosive devices, or propulsion-related equipment may be taking place in this area.

Main Support Base

27. (TSR) The main support base (MSB) is 6.0 nm east-southeast of the launch site (Figure 7 and Table 6); the rail line and road that serve the MSB continue northwest to the launch site and the missile assembly and checkout facility. The MSB was initially observed under construction in January 1972 when the road and railbeds were being constructed to the launch site area. Construction continued until March 1978 when the MSB appeared to be complete. In December 1978, a new area of construction was observed at the northeast corner of the MSB. Construction was continuing at a rapid pace in this area. The MSB consists of a maintenance facility, an administration and barracks area, a construction support area, a dependents' housing area, an operations support area under construction, a railyard area, and an electrical substation.

Maintenance Facility

28. (TSR) The maintenance facility is a wall-enclosed compound at the west end of the MSB and appears to be used for general vehicle and equipment maintenance and repair. The southern area of the facility contains a large high-bay building for probable vehicle maintenance, eight flat-roofed and three peak-roofed shop buildings, one foundry/forge building, and eight support buildings. The northern area of the facility is a barracks area containing 12 barracks, one messhall, eight support buildings, and three sets of animal pens.

Administration and Barracks Area

29. (TSR) The administration and barracks area is in the center of the MSB and is made up of two walled compounds. The west compound is relatively small and contains two probable flat-roofed administration buildings, three barracks, one messhall, and three small support buildings. The east compound is larger and contains a headquarters building, a new large possible headquarters building under construction, 16 barracks/quarters, one messhall, six garages in two motor pools, two shop/-foundry buildings, and 22 support buildings. A large possible headquarters building is being constructed on the northwest corner of the compound.

Construction Support Facility

30. (TSR) The construction support area is on the south side of the MSB and consists of an open storage area, a barracks area, and a shop/-foundry area. The open storage area is made up of a large concrete apron with a large rail-mounted bridge crane spanning the apron, four large storage buildings, one foundry/shop building, and eight smaller support buildings. The barracks area contains nine barracks, one messhall, and three support buildings. The shop/foundry area contains two foundries, two shop buildings, and six support buildings. 25X1

Dependents' Housing Area

31. (TSR) The dependents' housing area is on the east side of the MSB and is made up of 22 triplex family housing units, four single- story barracks/quarters, one messhall, and ten support buildings.

Operations Support Area

32. (TSR) Construction in the operations support area was begun in mid-1978 and was still underway during this period. This area is adjacent to the north side of the dependents' housing area. The area contains five two-story, probable barracks; two large messhalls; one large, three-story administration building; one 21-bay garage; 22 support buildings; two basketball courts; and a partially buried water tank. Possible electronics-related vans and van trucks and four transportable ground-mounted optical tracking

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domes have been observed in this area since [redacted] 25X1
[redacted] This equipment indicates that this area will 25X1
provide tracking and electronic support for the MTC. The equipment will probably also be deployed for instrumentation support of launches into the Xichang Impact Area. The tracking equipment observed in this area would be sufficient for two operationally deployed instrumentation positions with two optical tracking domes, a telemetry van, and an electronics support van at each location. No communications antennas have been identified in this area. Construction was continuing on the administration building and several of the smaller support buildings.

Railyard Area

33. (TSR) The railyard area is on the southeast corner of the MSB, adjacent to the south side of the dependents' housing area. The yard contains four sidings, three dead-end spurs, and a train station. No ramps, loading platforms, or material handling equipment has been observed. No rail lines serve any of the other areas of the MSB.

Electrical Substation

34. (TSR) The electrical substation is 1,000 meters east of the MSB in a small ravine. The substation consists of a transformer yard, three barracks, a messhall, and seven support buildings. Ground clearing for additional construction was observed north of the substation.

Storage Area and Rail-to-Road Transfer Point

35. (TSR) The storage area and rail-to-road transfer point is 7.0 nm from the launch site, at the extreme southeastern end of the complex (Figure 8 and Table 7). Construction was first observed at this facility in January 1972. Most of the construction had been completed by December 1973. The facility is served by a rail siding with three loading platforms. The main storage area, comprised of 34 storage buildings, one high-bay maintenance building, and eight support buildings, is at the east end of the facility. A housing area in the southwest corner of the facility contains nine barracks, one messhall, one shop/foundry, five support buildings, and a motor pool. A separately secured liquid storage area with three buried storage tanks is in a ravine at the northern corner of the facility. A separately secured storage area with four storage buildings and three support buildings is north of the liquid storage area.

REFERENCES

IMAGERY

(TSR) All applicable KEYHOLE imagery acquired through [redacted] was used in preparation of this report. 25X1

MAPS OR CHARTS

SAC. US Air Target Chart, Series 200, Sheet 0495-21, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. FTD/AFSC. [redacted] *Songlin (Sung-lin) Space Launch Site A Substructure and Service Tower (TSR),* Sep 79 (TOP SECRET R) 25X1
2. FTD/AFSC. [redacted] *Sung-lin Missile-related Facilities (U),* Jul 78 (TOP SECRET R) 25X1
3. DIA. [redacted] *Defense Intelligence Notice 52-2C PRC: Missile Test Center (U),* Feb 78 (TOP SECRET [redacted] 25X1 25X1
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5. DIA. DODIIR 2 241 000780, *PRC Space Development Situation (C),* Jan 80 (CONFIDENTIAL)
6. CIA/OPCEN. OPCEN 5523, *Weapons Intelligence Daily Review 6171/79 (C/WN), Aug 79* (TOP SECRET R- [redacted] 25X1

RELATED DOCUMENT

CIA/OWI. [redacted] *Current Status of the PRC Communications Satellite Program (U),* Apr 79 (TOP SECRET R) 25X1

REQUIREMENT

COMIREX P03
Project 200003DP

(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] Asian Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1 25X1

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Table 6.
Songlin Main Support Base
(Items keyed to Figure 7)

This table in its entirety is classified TOP SECRET RUFF

Item No	Description	Dimensions (m) L	W	No of Stories*
Railyard Area				
1	Train station			2
Electrical Substation				
2	Support bldg			
3	Storage bldg			
4	Transformer yard			0
5	Storage bldg			
6	Support bldg			
7	Control bldg			
8	Barracks			
9	Barracks			
10	Barracks			
11	Messhall			
Dependents' Housing Area				
12	Barracks/quarters			
13	Barracks/quarters			
14	Barracks/quarters			
15	Barracks/quarters			
16	Storage bldg			
17	Triplex family housing			
18	Triplex family housing			
19	Messhall			
20	Storage bldg			
21	Storage bldg			
22	Triplex family housing			
23	Triplex family housing			
24	Triplex family housing			
25	Triplex family housing			
26	Storage building			
27	Triplex family housing			
28	Triplex family housing			
29	Triplex family housing			
30	Triplex family housing			
31	Triplex family housing			
32	Triplex family housing			
33	Triplex family housing			
34	Triplex family housing			
35	Triplex family housing			
36	Triplex family housing			
37	Triplex family housing			
38	Triplex family housing			
39	Triplex family housing			
40	Triplex family housing			
41	Triplex family housing			
42	Triplex family housing			
43	Support bldg			
44	Support bldg			
45	Support bldg			
46	Support bldg			

Item No	Description	Dimensions (m) L	W	No of Stories*
Operations Support Area				
47	Garage			
48	Messhall			
a	Cooking area			
b	Dining area			
c	Cooking area			
49	Messhall			
a	Cooking area			
b	Dining area			
c	Cooking area			
50	Barracks/support bldg			2
51	Barracks/support bldg			2
52	Barracks/support bldg			2
53	Barracks/support bldg			2
54	Barracks/support bldg			2
55	Support/storage bldg			
56	Support/storage bldg			
57	Storage/support bldg			
58	Storage/support bldg			
59	Support bldg			
60	Support bldg			
61	Operations/administration bldg			3
62	Storage bldg			
63	Storage bldg			
64	Storage bldg			
65	Storage bldg			
Construction Support Facility				
66	Storage bldg			
67	Storage bldg			
68	Support bldg			
69	Storage/shop bldg			
70	Storage/shop bldg			
71	Foundry/shop bldg			
72	Foundry/shop bldg			
73	Storage/shop bldg			
74	Storage/shop bldg			
75	Support/storage bldg			
76	Storage/support bldg			
77	Storage/support bldg			
78	Storage bldg			
79	Storage bldg			
80	Storage bldg			
81	Storage bldg			
82	Barracks			
83	Barracks			
84	Barracks			
85	Barracks			
86	Barracks			
87	Barracks			
88	Barracks			
89	Barracks			
90	Barracks			

Item No	Description	Dimensions (m) L	W	No of Stories*
Administration and Barracks Area				
91	Garage			
92	Garage			
93	Garage			
94	Barracks/quarters			2
95	Support/office bldg			
96	Barracks/quarters			2
97	Messhall			
98	Support bldg			
99	Headquarters/office bldg			2
100	Barracks			2
101	Support bldg			
102	Support bldg			
103	Garage			
104	Garage			
105	Support/storage bldg			
106	Shop/foundry bldg			
107	Storage/support bldg			
108	Storage/support bldg			
109	Storage/support bldg			
110	Storage/support bldg			
111	Barracks/quarters			
112	Barracks/quarters			
113	Barracks/quarters			
114	Barracks/quarters			
115	Barracks/quarters			
116	Barracks/quarters			
117	Barracks/quarters			
118	Barracks/quarters			
119	Barracks/quarters			
120	Barracks/quarters			
121	Supply/support bldg			
122	Storage bldg			
123	Support/storage bldg			
124	Shop/foundry bldg			
125	Storage bldg			
126	Support bldg			
127	Shop bldg			
128	Storage/support bldg			
129	Support/shop bldg			2
130	Support/storage bldg			
131	Support/storage bldg			
132	Support/storage bldg			
133	Support/storage bldg			
134	Support bldg			
135	Support/shop bldg			
136	Possible headquarters bldg			
a	Office area			2
b	Reception/office area			3
c	Office area			2

Item No	Description	Dimensions (m) L	W	No of Stories*
137	Administration bldg			
a	Office area			2
b	Roof structure			3
c	Office area			2
138	Administration bldg/garage			
139	Messhall/support bldg			
140	Barracks/quarters			
141	Barracks/quarters			
142	Barracks/quarters			
Maintenance Facility				
143	Garage			
144	Garage			
145	Garage/office bldg			
146	Garage			
147	Office/support bldg			2
148	Maintenance bldg (drive in)			
149	Garage/shop bldg (9 bay)			
150	Maintenance bldg			
a	Office/shop area (drive in)			2
b	High-bay area (drive in)			3
c	Office/shop area			2
151	Shop/support bldg			
152	Shop/support bldg			
153	Shop/support bldg			
154	Shop/support bldg			
155	Foundry/shop bldg			
a	Shop area			
b	Foundry area			
156	Shop/support bldg			
157	Support bldg			
a	Office area			2
b	Support/shop area			
158	Shop/support bldg			
159	Shop/support bldg			
160	Messhall			
a	Dining area			
b	Cooking area			
161	Shop/support bldg			
162	Shop/support bldg			
163	Shop/support bldg			
164	Shop/support bldg			
165	Barracks			
166	Barracks			
167	Barracks			
168	Barracks			
169	Support bldg			
170	Barracks			
171	Barracks			
172	Support bldg			
173	Support bldg			
174	Barracks			
175	Barracks			

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*Structure is one story unless indicated otherwise.

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Table 7.
Songlin Storage Area and Rail-to-Road Transfer Point
(Items keyed to Figure 8)

This table in its entirety is classified TOP SECRET RUFF

Item No	Description	Dimensions (m) L	Dimensions (m) W	No of Stories*
Main Storage Area				
1	Storage bldg			
2	Storage bldg			
3	Storage bldg			
4	Storage bldg			
5	Storage bldg			
6	Storage bldg			
7	Storage bldg			
8	Storage bldg			
9	Storage bldg			
10	Storage bldg			
11	Storage bldg			
12	Assembly/fabrication bldg			
a	Shop/storage area			
b	Assembly/fabrication area			2
13	Storage bldg			
14	Storage bldg			
15	Storage bldg			
16	Storage bldg			
17	Storage bldg			
18	Storage bldg			
19	Storage bldg			
20	Storage bldg			
21	Storage bldg			
22	Storage bldg			
23	Storage bldg			
24	Storage bldg			
25	Storage bldg			
26	Storage bldg			
27	Storage bldg			
28	Storage bldg			
29	Storage bldg			
30	Storage bldg			
31	Storage bldg			
32	Storage bldg			
33	Storage bldg			
34	Storage bldg			
35	Storage bldg			
36	Storage bldg (ucon)			
Housing Area				
37	Barracks			
38	Barracks			
39	Barracks			
40	Storage bldg			
41	Headquarters/office bldg			2
42	Support bldg			
43	Barracks			
44	Barracks			
45	Barracks			
46	Barracks			
47	Barracks			
48	Messhall			
a	Dining area			
b	Cooking area			
49	Shop/foundry bldg			
50	Support bldg			
51	Barracks			
Liquid Storage Area				
52	Buried Tank			
53	Buried Tank			
54	Buried Tank			
North Storage Area				
55	Storage bldg			
56	Storage bldg			
57	Storage bldg			
58	Storage bldg			
59	Storage bldg			
60	Storage bldg			
61	Storage bldg			

*Structure is one story unless indicated otherwise.

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